

OIB - P-3 Orion - WFF 04/20/19 Science Report

Aircraft: [P-3 Orion - WFF \(See full schedule\)](#)

Date: Saturday, April 20, 2019

Mission: OIB

Mission Location: Nansen Gap

Mission Summary:

Mission: Nansen Gap

Priority: Medium

This is a modified version of the Fram Gateway missions flown in the earlier years of IceBridge. It differs from them in that it transits to and from the area of the Fram Strait at high-altitude, leaving more time to sample ice farther north and east than in prior years. In addition to Level 1 Requirements SI1 and SI2, this mission addresses sea ice level 1 baseline requirements SI3c and d by sampling sea ice north of Fram Strait.

In the interest of acquiring additional sea ice over a greater swath of the Arctic Ocean, we opted for this mission, which was shortened slightly to accommodate airfield opening hours. A thin layer northwest of Svalbard that we could partly see through in satellite imagery gave us confidence that this mission was viable. Following an uneventful transit, we descended into clear conditions for the survey at 1,500 ft AGL. Because of a significant (>50 kt) tailwind during the transit to the survey, we realized that we would not underfly Sentinel-3A at zero latency, so we decided to switch the return Sentinel underpass to Sentinel-3B (updated KML from notice this morning attached). We performed that zero latency Sentinel-3B underflight on the return crossing of the Fram Strait, underflying it in clear conditions at 15:00:34 UTC. We were successfully able to survey beneath the layer we had seen in imagery, and several beluga whales and seals were briefly spotted. We briefly descended to 1,000 ft AGL to avoid some thin layers. Headwall SWIR was frozen for about the first hour again and once warmed up had to be rebooted every now and then. Snow radar worked well and MCoRDS was again operated in imaging mode over land ice at high altitude during transit. We also recorded some short videos of our flight and a brief interview with Jeremy Harbeck for potential national broadcast this coming week. Because of time constraints associated with the airfield opening, we did not perform a ramp pass.

Attached images/files:

1. Map of today's mission (John Sonntag / NASA)
2. Updated KML of today's mission (John Sonntag / NASA)
3. The cockpit during the survey (Jeremy Harbeck / NASA)
4. Thin sea ice (nilas) finger rafting in a refreezing lead (Jeremy Harbeck / NASA)
5. Pressure ridge keel of sea ice floe (Jeremy Harbeck / NASA)
6. Cloud as evidence enhanced moisture flux over a lead (Jeremy Harbeck / NASA)

Images:

Map of today's mission



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The cockpit during the survey



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Thin sea ice (nilas) finger rafting in a refreezing lead



[Read more](#)

Pressure ridge keel of sea ice floe



[Read more](#)

Cloud as evidence enhanced moisture flux over a lead



[Read more](#)

Submitted by: Joseph MacGregor on 04/21/19

Related Flight Report:

P-3 Orion - WFF 04/19/19

Flight Number: #2091: 2019 OIB Science Flight #12

Payload Configuration: Operation IceBridge

Nav Data Collected: No

Total Flight Time: 7.6 hours

Submitted by: Kelly Griffin on 04/22/19

Flight Segments:

From:	BGTL	To:	BGTL
Start:	04/19/19 10:50 Z	Finish:	04/19/19 18:28 Z
Flight Time:	7.6 hours		
Log Number:	19P017	PI:	Joseph MacGregor
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Miles Flown:	2104 miles		

Flight Hour Summary:

	19P017
Flight Hours Approved in SOFRS	250
Total Used	216.3
Total Remaining	33.7

19P017 Flight Reports


Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
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03/26/19	#2053: 2019 OIB ATF	Check	0.9	0.9	249.1	0
03/27/19	#2059: 2019 OIB PTF-Laser	Check	2.3	3.2	246.8	0
03/28/19	#2061: 2019 OIB PTF-Radar	Check	3.2	6.4	243.6	0
04/01/19	#2068: 2019 OIB WFF-BGTL Transit Flight	Transit	6.9	13.3	236.7	2458
04/03/19	#2070: 2019 OIB Science Flight #1	Science	7.6	20.9	229.1	1938
04/05/19	#2072: 2019 OIB Science Flight #2	Science	7.7	28.6	221.4	1910
04/06/19	#2073: 2019 OIB Science Flight #3	Science	7.2	35.8	214.2	2000
04/08/19	#2075: 2019 OIB Science Flight #4	Science	6.9	42.7	207.3	1780
04/09/19	#2076: 2019 OIB Science Flight #5	Science	7.8	50.5	199.5	2045
04/10/19	#2081: 2019 OIB Science Flight #6	Science	10.1	60.6	189.4	2702
04/11/19	#2082: BGSF- BGTL Transit	Transit	2.2	62.8	187.2	696
04/12/19	#2083: 2019 OIB Science Flight #7	Science	7.2	70	180	2109
04/15/19	#2086: 2019 OIB Science Flight #8	Science	4.8	74.8	175.2	1243
04/16/19	#2087: 2019 OIB Science Flight #9	Science	7.6	82.4	167.6	2036
04/17/19	#2088: 2019 OIB Science Flight #10	Science	7.7	90.1	159.9	1937
04/18/19	#2090: 2019 OIB Science Flight #11	Science	7.8	97.9	152.1	2008
04/19/19	#2091: 2019 OIB Science Flight #12	Science	7.6	105.5	144.5	2104
04/20/19	#2092: 2019 OIB Science Flight #13	Science	6.9	112.4	137.6	0
04/22/19	#2094: 2019 OIB Science Flight #14	Science	6.6	119	131	1867
04/23/19	#2099: 2019 OIB Science Flight #15	Science	7.7	126.7	123.3	1979
04/25/19	#2102: 2019 OIB BGTL-KBGR Transit Flight	Transit	6.2	132.9	117.1	0
04/26/19	KBGR to BGSF Transit	Transit	5.7	138.6	111.4	0
05/05/19	2019 OIB Science Flight #16	Science	7.8	146.4	103.6	0
05/06/19	2019 OIB Science Flight #17	Science	8.4	154.8	95.2	0
05/07/19	2019 OIB Science Flight #18	Science	8.5	163.3	86.7	0
05/08/19	2019 OIB Science Flight #19	Science	8	171.3	78.7	0
05/12/19	2019 OIB Science Flight #20	Science	9	180.3	69.7	0
05/13/19	2019 OIB Science Flight #21	Science	7	187.3	62.7	0

05/14/19	2019 OIB Science Flight #22	Science	7.9	195.2	54.8	0
05/15/19	2019 OIB Science Flight #23	Science	8.3	203.5	46.5	0
05/16/19	2019 OIB Science Flight #24	Science	6.3	209.8	40.2	0
05/17/19	2019 OIB Transit	Transit	6.2	216	34	0
05/17/19	2019 OIB Transit	Transit	0.3	216.3	33.7	0

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

Flight Tracks:

Attachment	Size
 2_sinansengap_labels.kml	9.94 KB

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